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United States
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Economic Research Service

Natural Resources and Environment Division

AREI UPDATES

Updates on Agricultural Resources and Environmental Indicators

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Farm Machinery Purchases, Exports, and Imports

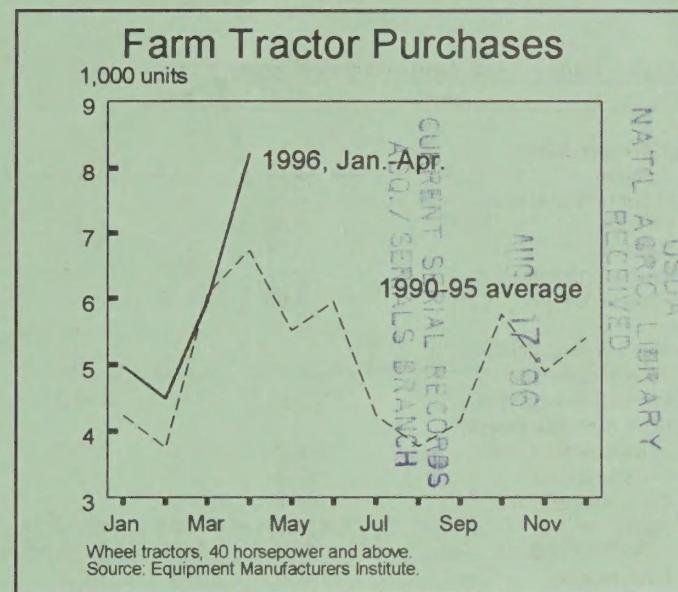
- Farm machinery purchases during January-April 1996, likely stimulated by high farm commodity prices, exceeded those during the same period of 1995.
- Farm machinery trade increased in 1995 and the first 2 months of 1996. Exports have exceeded imports continuously for 6 years.
- Canada is the major market for U.S. exports of farm machinery. Most U.S. imports came from Canada, Germany, Japan, and the United Kingdom.

Tractor purchases were up in 1995 and up again through the first 4 months of 1996 for all horsepower classes. Tractor purchases for the first 4 months of 1996 equaled or exceeded the average for the same 4 months from 1990 to 1995. Record high commodity prices for major crops, such as corn, wheat, and soybeans, are likely the major factors responsible for increasing capital investments in farm machinery. Combine purchases, up in 1995, were down the first 4 months of 1996, but will likely increase as crop harvesting progresses.

Several other factors that affect the demand for farm machinery were up in 1995. The value of farm assets was higher due to increased farm real estate values. Increased assets overshadowed a rise in farm debt, resulting in increased farm equity. This results in more collateral to back equipment loans.

Farm machinery exports rose in 1995 and were up again in the first 2 months of 1996. The value of exports has increased every year since 1991. Major export categories are tractors, combines and harvesters, and parts, components, and assemblies, accounting for over 50 percent of total farm machinery exports.

Imports of farm machinery rose 6 percent in 1995 with tractors over 100 horsepower accounting for the largest shares.



From one-fourth to one-third of farm machinery exports typically go to Canada. The second largest importer of U.S. farm machinery has usually been Mexico. However, Australia stepped into second place in 1995, taking 7.2 percent of U.S. exports. Mexico dropped to fifth place.

Twenty percent of U.S. farm machinery imports are from Canada. Canada has led in exports of farm machinery imported into the U.S. for the last 3 years, with Germany leading the 3 years previous. Canada, Germany, Japan, the United Kingdom, and Italy have been the 5 largest exporters of farm machinery to the U.S. for the last 6 years. These five countries have accounted for an average 72 percent of U.S. farm machinery imports into the U.S. from 1990 through 1995.

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About AREI UPDATES

AREI UPDATES is a periodic series that supplements and updates information in **Agricultural Resources and Environmental Indicators (AREI)**, USDA, ERS, AH-705, Dec. 1994. **UPDATES** report recent data from surveys of farm operators and others knowledgeable about changing agricultural resource use and conditions, with only minimal interpretation or analysis. Please contact the individual listed at the end of the text for additional information about the data in this **UPDATE**. If you would like to be added to the mailing list or have other questions about **AREI UPDATES** or **AREI**, contact Richard Magleby, (202) 219-0436. [rmagleby@econ.ag.gov]

Table 1—Domestic farm machinery unit sales

Machinery category	1988	1989	1990	1991	1992	1993	1994	1995	JAN-APR 1995	JAN-APR 1996
<i>Units</i>										
Tractors:										
Two-wheel-drive										
40-99 hp	33,100	35,000	38,400	33,900	34,500	35,500	39,100	39,800	12,200	12,900
100 hp and over	16,100	20,600	22,800	20,100	15,600	19,000	20,400	20,600	8,700	9,000
Four-wheel-drive	2,700	4,100	5,100	4,100	2,700	3,300	3,700	4,400	1,700	1,900
All farm tractors	51,700	59,700	66,300	58,100	52,800	57,800	63,200	64,700	22,600	23,800
Self-propelled combines	6,000	9,100	10,400	9,700	7,700	7,850	8,500	9,200	2,200	1,900

Source: Equipment Manufacturers Institute, 1995.

Table 2—Trends in U.S. farm investment expenditures and factors affecting farm investment demand, 1987-95

Item	1987	1988	1989	1990	1991	1992	1993	1994	1995F
<i>\$ billion</i>									
Capital expenditures:									
Tractors	2.10	2.54	2.90	3.12	2.59	2.83	2.69	2.89	2.87-2.94
Other farm machinery	4.30	4.22	5.09	5.59	5.41	5.13	5.49	5.19	5.19-5.45
Total	6.40	6.76	7.99	8.71	8.00	7.96	8.18	8.08	8.06-8.39
Repairs	3.54	4.05	5.57	4.44	4.55	4.21	4.51	4.44	4.43-4.52
Trucks and autos	2.17	2.37	2.58	2.63	2.40	2.30	2.50	2.56	2.54-2.61
Farm buildings ¹	2.60	2.39	2.53	2.80	2.75	2.40	3.29	3.25	3.24-3.30
Factors affecting demand:									
Interest expenses	15.0	14.3	13.9	13.4	12.1	11.2	10.8	11.7	12.6
Production expenses	128.8	137.8	144.9	153.7	153.4	152.6	160.9	166.7	168.0
Farm business assets:									
Real estate assets ²	578.9	595.5	615.7	618.4	624.4	640.6	670.9	703.3	726.0
Other assets ²	193.9	205.6	214.1	220.3	219.4	227.8	232.1	230.1	230.6
Farm business debt ³	144.4	139.4	137.2	138.0	139.2	139.1	142.0	146.8	151.0
Equity ²	628.2	661.7	692.4	700.7	704.6	729.3	761.0	786.6	805.6
Agricultural exports ⁴	27.9	35.3	39.6	40.2	37.6	42.4	42.6	43.5	54.2
Cash receipts	141.8	151.2	161.1	169.4	167.8	171.3	177.1	179.7	184.1
Net farm income	39.7	38.0	47.9	44.8	38.4	48.0	42.1	46.7	38.6
Net cash income	55.8	54.5	54.2	52.9	50.4	55.4	58.1	49.8	51.2
Government payments	16.7	14.5	10.9	9.3	8.2	9.2	13.4	7.9	6.2
<i>Million acres</i>									
Idled acres ⁵	76.2	77.7	60.8	61.6	64.5	54.9	59.8	49.2	54.8
<i>Percent</i>									
Real prime rate ^{6,7}	5.0	5.4	6.5	5.7	4.5	3.5	3.8	5.0	7.0
Nominal farm machinery loan rate ^{6,7}	11.5	11.7	12.8	12.3	11.3	9.3	8.7	8.6	10.3
Real farm machinery loan rate ⁶	8.0	8.4	8.4	8.0	7.5	6.5	6.5	6.5	8.4
Debt-asset ratio ⁸	18.7	17.4	16.5	16.4	16.5	16.0	15.7	15.7	15.7

F=forecast.

¹Includes service buildings, structures, and land improvements. ² Calculated using nominal dollar balance sheet data, excluding farm households, for December 31 of each year. ³Excludes CCC loans. ⁴Fiscal year. ⁵Includes acres idled through commodity programs and acres enrolled in the Conservation Reserve Program. ⁶Deflated by the GDP deflator. The 1995 rate is an average of the 1st two quarters. ⁷Average annual interest rate. From the quarterly sample survey of commercial banks: Agricultural Financial Databook, Board of Governors of the Federal Reserve System. ⁸Outstanding farm debt divided by the sum of farm real and nonreal estate asset values.

Sources: Economic Research Service and Federal Reserve System.

Table 3—Value of farm machinery exports and imports, 1990-96¹

Item	1990	1991	1992	1993	1994	1995	JAN-FEB	JAN-FEB
							1995	1996
Exports								
Total	3,392,350	3,196,343	3,279,668	3,418,900	3,684,417	4,158,333	620,369	725,401
Tractors								
Wheel tractors, 40-100 hp	15,952	12,403	18,475	31,362	45,497	97,622	13,594	20,602
Wheel tractors, over 100 hp	331,019	335,202	355,991	445,147	416,799	524,889	80,122	95,061
Wheel tractors, used & misc.	91,413	84,272	76,250	88,169	87,119	86,387	16,038	18,908
Crawlers, less than 160 HP ²	12,716	14,196	13,111	15,643	15,466	15,938	1,388	2,028
Crawlers, over 160 HP ²	296,037	356,309	326,568	231,544	312,381	310,421	42,567	44,530
Crawlers, used ²	16,959	24,835	20,596	16,446	21,207	18,155	3,355	2,255
Combines & other harvesters	377,792	334,402	346,280	471,331	475,270	506,300	67,720	88,696
Balers & haying equipment	164,199	140,461	147,537	184,752	194,934	165,916	28,987	23,909
Moldboard plows	1,611	852	1,480	845	912	331	109	51
Disc & other plows	9,373	10,392	10,601	15,377	15,376	12,034	1,633	2,197
Harrows & cultivators	28,319	26,782	28,969	42,878	45,139	40,496	7,009	8,768
Seeders & planters	35,873	29,108	34,439	46,421	52,074	39,496	8,996	10,747
Fertilizing equipment	17,671	21,551	22,495	23,464	26,626	22,275	3,739	5,363
Other seeding, fert., & spray equipment	70,830	101,472	108,605	115,777	142,781	141,054	20,599	21,461
Irrigation equipment	183,143	174,439	184,999	200,282	157,099	154,198	25,944	32,175
Horticultural equipment	179,304	94,671	154,037	175,660	180,430	184,855	23,252	33,246
Crop market preparation equipment	56,589	64,941	69,187	77,757	61,047	90,856	10,895	10,482
Cleaning & grading equipment	20,634	17,756	21,459	16,707	20,063	22,611	2,327	4,186
Livestock & poultry equipment	161,897	197,322	207,275	207,581	245,128	268,115	32,127	46,027
Agricultural tools	4,288	27,436	41,238	20,851	21,779	19,823	3,570	4,751
Agricultural engines ²	314,643	268,631	311,726	252,850	196,790	315,884	57,763	68,741
Gear boxes, axles & assemblies ²	968,933	846,216	758,246	711,499	924,749	1,095,560	162,512	178,170
Trailers, wagons & parts	13,155	12,694	20,104	26,557	25,751	25,117	6,123	3,047
Imports								
Total	2,545,408	1,945,107	2,082,814	2,210,069	2,931,902	3,119,640	529,954	534,306
Tractors								
Wheel tractors, 40-100 hp	718,251	547,226	568,912	564,560	698,593	722,124	118,519	92,090
Wheel tractors, over 100 hp	182,561	172,203	187,610	136,803	202,113	219,885	24,314	57,539
Wheel tractors, used & misc.	97,309	45,839	38,195	59,399	128,825	132,521	24,468	23,815
Crawlers, less than 160 HP	128,720	81,910	93,065	148,537	203,710	187,483	37,248	24,877
Crawlers, over 160 HP	8,953	2,207	47,155	15,005	36,132	140,274	24,776	15,384
Crawlers, used	3,796	743	1,310	4,907	8,484	3,846	236	568
Combines & other harvesters	146,263	113,014	108,390	137,321	138,071	154,870	21,336	23,639
Balers & haying equipment	189,542	156,386	142,974	152,709	184,160	200,500	49,655	40,228
Moldboard plows	6,467	6,183	3,446	2,897	752	595	13	0
Disc & other plows	44,307	31,672	27,255	21,531	21,748	21,227	4,142	3,695
Harrows & cultivators	190,090	127,742	118,295	121,956	142,636	138,185	27,262	30,577
Seeders & planters	40,474	19,041	25,715	56,487	52,633	46,546	11,323	15,543
Fertilizing equipment	16,897	14,202	14,634	15,773	16,206	14,107	3,244	3,100
Other seeding, fert., & spray equipment	41,900	33,674	34,502	38,656	43,218	41,240	8,942	11,064
Irrigation equipment	6,930	12,924	18,562	16,689	10,915	11,841	2,763	4,059
Horticultural equipment	36,938	27,047	26,813	35,552	42,786	43,842	7,477	5,967
Crop market preparation equipment	19,643	15,825	18,684	19,837	23,417	24,167	3,131	2,243
Cleaning & grading equipment	8,221	8,672	9,467	15,320	17,381	12,473	1,750	770
Livestock & poultry equipment	64,027	55,164	65,043	62,754	71,311	76,747	13,901	12,250
Agricultural tools	54,615	35,333	38,773	39,917	42,658	44,412	9,165	9,349
Agricultural engines	86,500	57,557	70,634	68,707	104,124	127,473	17,988	14,897
Gear boxes, axles & assemblies	446,211	376,379	419,061	468,480	734,028	746,162	116,968	140,810
Trailers, wagons & parts	6,793	4,164	4,319	6,272	8,001	9,120	1,333	1,842
Balance: exports minus imports	846,942	1,251,236	1,196,854	1,208,831	752,515	1,038,693	90,415	191,095

¹Some items may not be comparable to previous trade data due to reclassification.²Includes industrial and other non-agricultural uses.

Source: Compiled from official unpublished statistics of the U.S. Department of Commerce.

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Table 4—Value of U.S. farm machinery trade ranked by 1995 top 15 exporting and importing countries, 1990-95¹

Country	1990	Pct.	1991	Pct.	1992	Pct.	1993	Pct.	1994	Pct.	1995	Pct.
	Thousand dollars											
Exports²												
Total	3,392,350	100.0	3,196,343	100.0	3,279,668	100.0	3,418,900	100.0	3,684,417	100.0	4,158,333	100.0
Canada	971,050	28.6	752,879	23.6	849,023	25.9	1,122,391	32.8	1,171,604	31.8	1,335,384	32.1
Australia	219,104	6.5	147,442	4.6	182,635	5.6	219,840	6.4	278,528	7.6	301,158	7.2
Germany	125,134	3.7	166,092	5.2	148,140	4.5	175,413	5.1	165,887	4.5	252,681	6.1
France	158,490	4.7	134,284	4.2	112,131	3.4	101,751	3.0	115,329	3.1	184,200	4.4
Mexico	292,857	8.6	311,679	9.8	321,810	9.8	303,480	8.9	370,822	10.1	183,995	4.4
United Kingdom	176,174	5.2	115,098	3.6	106,279	3.2	120,503	3.5	126,745	3.4	168,350	4.0
Belgium	220,463	6.5	174,768	5.5	161,959	4.9	77,458	2.3	74,033	2.0	133,987	3.2
Japan	178,004	5.2	150,608	4.7	112,875	3.4	102,287	3.0	119,077	3.2	129,474	3.1
Argentina	11,352	0.3	22,668	0.7	31,066	0.9	38,370	1.1	68,888	1.9	78,447	1.9
Brazil	40,448	1.2	50,038	1.6	41,302	1.3	35,037	1.0	48,727	1.3	76,558	1.8
Rep S Africa	42,542	1.3	38,871	1.2	40,226	1.2	45,366	1.3	63,387	1.7	76,319	1.8
Singapore	64,989	1.9	62,636	2.0	67,995	2.1	74,295	2.2	77,973	2.1	73,456	1.8
South Korea	60,131	1.8	56,013	1.8	24,284	0.7	32,893	1.0	38,089	1.0	72,541	1.7
China	17,075	0.5	28,973	0.9	38,497	1.2	54,793	1.6	37,473	1.0	61,623	1.5
Chile	25,498	0.8	30,887	1.0	38,688	1.2	37,604	1.1	35,359	1.0	54,122	1.3
Other Countries	789,039	23.2	953,407	29.6	1,002,758	30.7	877,419	25.7	892,496	24.3	976,038	23.7
Imports												
Total	2,545,408	100.0	1,945,107	100.0	2,082,814	100.0	2,210,069	100.0	2,931,902	100.0	3,119,640	100.0
Canada	521,353	20.5	357,209	18.4	329,494	15.8	418,764	18.9	529,041	18.0	623,755	20.0
Germany	525,441	20.6	457,242	23.5	467,904	22.5	363,997	16.5	447,741	15.3	469,356	15.0
Japan	224,126	8.8	173,462	8.9	219,325	10.5	284,103	12.9	443,030	15.1	445,673	14.3
United Kingdom	398,884	15.7	285,465	14.7	281,335	13.5	336,153	15.2	413,520	14.1	394,435	12.6
Italy	162,277	6.4	149,185	7.7	171,737	8.2	203,128	9.2	308,056	10.5	274,014	8.8
France	153,094	6.0	112,817	5.8	162,881	7.8	155,951	7.1	210,175	7.2	232,417	7.5
Brazil	97,573	3.8	95,232	4.9	94,905	4.6	90,580	4.1	117,017	4.0	138,446	4.4
Mexico	42,717	1.7	30,466	1.6	31,908	1.5	42,598	1.9	65,554	2.2	124,155	4.0
Netherlands	39,361	1.5	31,053	1.6	32,981	1.6	39,967	1.8	45,301	1.5	48,487	1.6
Belgium	135,381	5.3	54,820	2.8	46,837	2.2	26,146	1.2	34,777	1.2	40,926	1.3
Taiwan	31,381	1.2	26,983	1.4	29,718	1.4	30,206	1.4	35,448	1.2	35,537	1.1
China	6,179	0.2	5,132	0.3	7,551	0.4	9,732	0.4	17,015	0.6	25,368	0.8
Denmark	16,888	0.7	11,454	0.6	16,009	0.8	17,057	0.8	18,732	0.6	22,996	0.7
Spain	6,342	0.2	7,011	0.4	10,201	0.5	10,589	0.5	23,996	0.8	21,571	0.7
Hungary	14,829	0.6	13,796	0.7	16,190	0.8	10,385	0.5	16,800	0.6	21,175	0.7
Other Countries	169,582	6.8	133,780	6.7	163,838	7.9	170,713	7.6	205,699	7.1	201,329	6.5

¹Some items may not be comparable to previous farm machinery trade data due to reclassification.

²Includes industrial and other non-agricultural uses.

Source: Compiled from official unpublished statistics of the U.S. Department of Commerce.

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